GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

UNSTARRED QUESTION NO:677
ANSWERED ON:20.07.2016
Adoption of Villages by CSIR
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Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the details of villages adopted by the Council of Scientific and Industrial Research (CSIR) to promote employment generation and income augmentation during the last three years and the current year, year-wise;
(b) the number of scientists sent to those villages to identify technologies that would help people in augmenting their income;
(c) the details of the technologies provided by the CSIR across the country, State-wise including Bihar;
(d) whether there has been any follow up on the technologies which were being implemented and if so, the detailed report on the economic growth and employment generation in the villages; and
(e) if not, the reasons therefor?

Answer

MINISTER OF STATE OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES

(SHRI Y.S. CHOWDARY)

(a) Council of Scientific and Industrial Research (CSIR) doesn't adopt villages to promote employment generation and income augmentation. It undertakes R&D activities in project mode and provides S&T interventions for welfare of the rural people across the country. Information about such activities undertaken by CSIR during last three years and current year are provided at Annexure-I.

(b) More than 400 scientific staff have been deployed by CSIR for implementing the R&D projects for villages/ rural sector during last three years.

(c) The CSIR has been deploying its S&T knowledgebase for the socio economic development of the villages. CSIR efforts are focused at bringing in desired S&T interventions for improving the quality of life, removing drudgery and augmenting income of the rural people across the country including Bihar.
CSIR has developed technologies for: food and food processing; water; healthcare; building and construction; water; environment and sanitation; rural roads; cultivation and processing of economic plants; farm machinery; leather; pottery etc. The technologies developed have been gainfully utilized in several states and contributed for socio economic development.

CSIR has developed a number of technologies on water, ranging from source finding to mapping of water resources, from quality assessment to enhancing potability of water and from recycling to waste water treatment. The technology for community scale RO desalination plants has been developed. The RO plants in various states (Rajasthan, Tamil Nadu, Delhi, West Bengal, Gujarat etc.) have been set up based on the technology. Further, technology for arsenic removal from water has been developed and benefitted people in West Bengal. Also high flux hollow fibre membrane based technology for water disinfection and purification at affordable cost has been developed and is being used at commercial level.

CSIR has developed KrishiShakti, a small range (11.2 hp) diesel engine tractor for farmers with small land holdings for effective tilling. The technology of the same has been transferred and manufacturing has been initiated in West Bengal. The tractor was launched in Delhi on 20th November 2014 and five tractors were handed over to farmers.
CSIR has improved the performance of gur bhattis which are used in large number by the villagers in sugarcane growing areas. The improved gur bhattis have longer furnace life, consume less fuel (bagasse) and emit less exhaust smoke. CSIR has developed improved design kerosene multi wick stove (non-pressure type), which is popularly known as 'Nutan Large' stove. By use of the improved design stoves, about 25-30% fuel saving is achieved. CSIR has also developed a kerosene pressure stove (offset burner type) with 10-15% fuel saving. These stoves are used in households, small restaurants, roadside tea shops etc. They are popular among rural masses and are also used in urban and semi-urban areas.

A cost effective and efficient anti tarnishing lacquer has been developed for brasswares, helping the Moradabad brass cluster. The developed lacquer is very efficient to prevent tarnishing for long durations. Also, energy efficient brass melting furnace has been developed which is smoke-free coal furnace, handles more charge (brass melt), reduces gas emission and pollution by 80% and consumes 20% less coal. It is user friendly as artisans can adopt this furnace without changing their current practices and like the present furnace, this modified version can also be repaired by the artisans. The knowhow has been transferred for commercial use.

CSIR has developed an indigenous substitute of Ukraine clay in granito ceramic tiles which has reduced the Ukraine clay requirement from 20% to about 1%, reducing thus the foreign material import and associated costs. This has made major economic difference and benefitted small and medium scale enterprises in Gujarat.

A food processing unit has been set up at CSIR-Centre for High Altitude Biology (CSIR-CeHAB) in the remote tribal region of Lahaul

and Spiti. A brining unit has been designed and prototype developed for the preservation of locally and abundantly produced peas and cauliflowers. The knowhow was showcased at the District level Tribal Fair at Keylong and training organized for the benefit of progressive farmers in the area of food and food processing: making novel products from Buckwheat; and also brining of the peas which is a major crop.

The people of North East India make a number of leather products but they were unable to reach the market and earn desired profit due to lack of aesthetic appeal and standardisation. There was a need to transform this knowledge into wealth by increasing the value of the products without losing its real essence. CSIR carried out a comprehensive survey in the north eastern region. Based on the inputs from the survey, new ranges of products were developed. The handbags are crafted and designed with the ethnic materials of the northeast and the inspirations are derived from Ornaments, Dresses & Artifacts adorned by tribal folks of the northeast India. The products were displayed in various national/ international fairs and have attracted many enquiries. This has benefited the women entrepreneurs of North Eastern region.

CSIR has set up post-harvest centres in Mizoram (Aizawl) and Arunachal Pradesh (Pashighat). These centres are focused at helping the local farmers in the region for value addition to their agricultural produce. The centres house technology for high efficiency drying and processing of ginger, cardamom, turmeric, chilies etc. The farmers are able to sell their produce at 20 − 25% higher price to the processing centres set up. The CSIR Post Harvest Technology Centres would generate direct employment to about 300 people.

CSIR has worked with the Indian Council of Agricultural Research (ICAR) for the development of highly priced rice variety, Samba Mahsuri, resistant to the serious Bacterial Blight (BB) disease. This new variety called, improved Samba Mahsuri (ISM) has been released for commercial cultivation and is being very much appreciated by farmers growing rice.

A novel variety of Ashwagandha with high root yield of 15 quintal/hectare has been developed and released to farmers which would help farmers with more earnings. The Ashwagandha has useful applications in pharma applications as anti-inflammatory, anti-stroke and anti-arthritis drug adjuvant.

CSIR has introduced and commercialized floriculture in Lahaul and Spiti region of Himachal Pradesh. The laboratory has played a catalytic role in the promotion of the commercial floriculture in Himachal Pradesh. Utilizing CSIR agro-technologies of Lilium, carnation, and gladiolus flowers in the region, the flower growers have realized good income through sale of loose and cut flowers at Delhi flower market. Over 3000 farmers are engaged in floriculture in Himachal Pradesh.

CSIR has catalyzed commercial cultivation of Geranium in Uttaranchal and Lavender in Jammu & Kashmir through community participation. In these end to end missions, farmers have been trained not only for cultivation of Geranium and Lavender but also for extraction of oil, augmenting thus their income. Likewise CSIR efforts through development of niche Mentha varieties and their propagation for mass cultivation are noteworthy. The efforts have led to economic growth and have enabled India to acquire a world leadership position in Menthol mint oil production and export.

CSIR efforts for socio-economic development had led to: empowering people of the Kashmir Valley through creation of aromatic industry; development of bio-inoculants for enhancing plant productivity and its dissemination to the farmers in Uttar Pradesh in the partnership with the State Government on a very large scale and it has enhanced agriculture productivity; and development of mushroom technology, its transfer and training which has benefitted economically the rural women in North East States.

Knowhow for economically valuable cultivation for the seaweed Kappaphyus alavarezii have been developed. This seaweed is being commercially cultivated by >800 SHGs in Tamil Nadu. Each member involved in seaweed cultivation is earning on an average ? 5000/- per month for a period of 8 months in a year. The seaweed also yields bioenergy products along with co-generation of bio-fertilizer.

CSIR has been contributing in the area of healthcare. Some recently developed technologies/interventions benefitting the common people include: Streptokinase (a drug for cardiovascular disease); Risorine (a cost effective bioavailability enhanced anti-tuberculosis drug); Battery operated hand-held MicroPCR (towards affordable and point of care disease diagnostics for Tuberculosis, Malaria, Dengue, Chikungunya, Hepatitis B and H1N1); nonClonableID technology for medical product authentication; Diagnostic system for affordable, point of need testing to manage HIV and TB; Novel molecular diagnostics for eye diseases; and eHealth Center (eHC, a platform for the fourth paradigm of science, data-intensive discovery, while bringing affordable healthcare services to the doorstep of people).

CSIR laboratories are endeavoring to further strengthen medicinal and aromatic plant industry in Kashmir Valley through field level demonstration and propagation of region specific superior genotypes of medicinal & aromatic plants in Jammu & Kashmir region. Efforts are being made to train farmers on cultivation and value addition of medicinal and aromatic plants like Lavender, Rose, Lemongrass, Tegetes, Mint, and Phalsa. Awareness camps for farmers of the area besides demonstrations of Mobile Distillation Unit for extraction of essential oils have been organized. Already more than seventy farmers in 14 villages of Kathua district (J&K) have been distributed slips of lemongrass, Java citronella and vetiver for cultivation in 17.47 hectares area under a project. Details of the projects implemented by CSIR in different states in the past few years are provided in Annexure-II.

(d) CSIR laboratories follow up the technologies implemented in the field on regular basis. They train farmers regularly. Details on the projects implemented during past few years are provided at Annexure-II. Also, data on medicinal and aromatic plants outreach and impact is provided at Annexure-III.

(e) Not applicable.

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Annexure-I

S. No. Project Name Project Code Villages covered in last three years and current year
(2013-2016)

1. Field demonstration of region specific Medicinal & Aromatic plants genotypes of CSIR for socio-economic upliftment of masses in J&K region (J&K AROMA AROGYA GRAM-JAAG) RSP-01 Villages of districts Kathua, Udhampur, Reasi, Doda, Ramban and Kishtwar of Jammu region
2. Scientific and technolgical interventions at Tumda Kheda village, Barkheda Setu Panchayat and surrounding villiages of Raisen district, Madhya Pradesh for improving rural livelihood RSP-14 Tumda Kheda and nearby villages of Raisen District
3. Documentation and S&T Intervention in the Traditional Architecture of Rural areas of the Western Himalayan region RSP-02 30 villages in 4 districts of Himachal Pradesh
4. Increasing incomes of rice farmers by popularization of improved Samba Mahsuri, a bacterial blight resistant rice cultivar RSP-09 Villages of Telangana, Andhra Pradesh, Chhattisgarh, Tamil Nadu and Karnataka
5. Popularization of Apple cultivation in Eastern ghats and Gondwana regions Telagana, Andhra Pradesh and Odissa RSP-10 Eastern Ghats and Gondwana Regions of Andhra Pradesh, Odisha and Telangana
6. CSIR 800 Rural development activity RSP-11 villages of Ramanathapuram and Sivaganga districts
7. Technology development in the area of food processing and enabling hygienic and safe food for rural folks RSP-08 Medak district (Telengana), Puttegowdanahundi village, Mysore and adjoining area
8. Field demonstration and permanent installation of Ceramic Membrane based contactor for enchanced Arsenic and iron oxidation at a conventional Arsenic and iron Removal plant, Ichlampur, North 24 PGS, West Bengal RSP-28 Ichlampur, North 24 PGS, West Bengal
9. Demonstration and handing over an 80,000 LPD capacity ceramic membrane based turbid and saline river water purification system and coupling with a 30,000 LPD capacity Reverse Osmosis unit RSP-29 Katakal Area, Puratan Bazar, Hasnabad, Distt North 24 Parganans, West Bengal
10. Demonstration of high capacity membrane modules (8m3/hr) for arsenic and iron removal at Ramchandrapur village district Malda, Wesst Bengal RSP-30 Ramchandrapur village, Dist. Malda

11. Technological intervention of terracotta sector in Bankura/ South 24 parganas district of West Bengal RSP-31 Duttapukur (24 Parganas, West Bengal),
12. Water quality monitoring and assessment on river ganga near dimaond harbour sewage water treatment plant RSP-32 Diamond harbour, West Bengal
13. Quality checking of drinking water in rural areas to detect the presence of endocrine disrupters RSP-33 Haldia and Kolaghat and nearby villages
14. Development and deployment of improved agro-and processing technologies of economically important medicinal and aromatic crops for income enhancement and employment generation RSP-04 Villages near Lucknow, Pantnagar, Purara, Bagheswar, Hyderabad and Bengaluru
15. Providing solutions through sceince and technologies for problems of rural sector RSP-05 Villages of Cuddalore district
16. Ensuring sustainable livelihood for womenfolk in Mizoram RSP-16 Villages of Tuirial, Mizoram
17. Rural Life Quality Improvement through Installation of Iron Removl Plants in Bankura District of West Bengal RSP-17 Bankura District of West Bengal
18. Indigenous RO membrane technology deployment, modifications if any with maintenance and repairing of plants in rural development sector/ societal mission for producing safe drinking water RSP-18 Villages in Rajasthan, Tamilnadu, Andhra Pradesh, Punjab, Gujarat coast, Didwana/Nawa (Rajasthan)
19. Rural development in the Western Himalayan region and Adjoining Plains through transfer of CSIR-IHBT technologies RSP-06 Villages of Western Himalayan region and Adjoining Plains
20. â€¢ Identification of novel molecules from medicinal plants from North East and awareness programs for the control of Malaria
â€¢ Establishment and propagation of Samadhan Kendra at Jakaram (Warangal) Telangana & Jagannadhapuram, Kommugudem (West Godavari), Andhra Pradesh
â€¢ Sustainable Tassar culture development and Improvement of socio-economic conditions of tribal tasar farmers in Telangana and Andhra Pradesh
â€¢ Popularization of Pheromone Application Technology (PAT): An Upcoming Versatile Agro Practice for Pest Management
â€¢ Erection and commissioning of Water treatment plants RSP-27 â€¢ Malaria endemic villages of Northeastern states
â€¢ Jakaram (Warangal) Telangana & Jagannadhapuram, Kommugudem (West Godavari), Andhra Pradesh
â€¢ Villages in Telangana and Andhra Pradesh
â€¢ 10 Villages Gujarat in Telangana
â€¢ 12 locations in Telangana and Andhra Pradesh
21. Development of aroma products/value addition of aromatic oils RSP-23 Jammu region and multi-location trial at Srinagar (J&K) and Hardoi (UP), Kannauj, Ladakh region of Jammu and Kashmir State
22. R&D Activities focused at Rural Development uder CSIR 800 programme. RSP-13 Village Sunderpur, Distt. Saharanpur U.P, Village lalwapani, Distt. Chapawat, Uttarakhand
23. Development, demonstration and dissemination of CSIR technologies under CSIR-800 RSP-20 Villages near Koraput, Odisha
24. CSIR-NBRI iniviatives for rural development tghrogh green technologies RSP-25 Villages near Lucknow and Wada Block of Thane District Mahoba
25. Fabrication and deployment of CSIR-NCL"s oxygen enrichment units (OEU) and UF-membrane based water purification units for Indian rural/ tribal community RSP-22 rural/ tribal belts of Palghar / Thane districts
26. Indoor Air Pollution Control in Rural areas RSP-17 Villages near Nagpur
27. Clean water and sanitation in rural areas RSP-18 Pandherkawada village, Nagpur district and other nearby villages
28. Scientific Management of plant and algal biomass in rural areas RSP-19 Sausar, Chhindwara district,MP, Paanchgaon, Nagpur , selected villages of Vidharbha, Maharashtra
29. Rural Entrepreneurship and skill development through demonstration and training of appropriate technologies of CSIR-NEIST RSP-07 Nearby villages of Jorhat
30. Identification and exploration of groundwater resources in problematic terrains and drought affected regions for meeting the drinking water needs of rural communities RSP-12 villages in Choutuppal Mandal, Nalgonda district

31. CSIR 800 programmes RSP-03 MSME units of Kerala, Karnmataka, Delhi and Tamilnadu,
Ernakulam, Kerala
32. Consstruction technology for Precast concrete ferrocement toilet core unit RSP-26 Prototype developed available for all villages
Annexure-II
State wise activities carried out during past few years

A. Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujrat, Karnataka, Uttarakhand, Uttar Pradesh
S. No. Activities Achievements/outcome
1. Samadhan Kendra − A rural information technology center for farmers 4 Samadhan Kendra established at East and West Godavari districts
Each Samadhan Kendra caters to the needs of 20 villages
1 lakh population benefitted from each centre
70,000 mango farmer's benefited in Chittoor district
About 43000 visitors visited the four Samadhan centres of West Godavari district of Andhra Pradesh
Integral part of the India Development Gateway (InDG) Portal
2. Strategic Medicinal and Industrial Plants based technologies Cultivation of Aswagandha increased to 505 ha involving 200 farmers cultivating the crop in different drought prone areas Anantpur and Kurnul districts of Andhra Pradesh
Cultivation of Citronella over 1450 ha involving 786 farmers in Vishakhapatnam
Cultivation demonstrated in Bhatkal Taluk of Karnataka, villages Ujjinagere, Hulihonda, Arasinagere and Tattihalli and Bangalore, Purara, Pantnagar of Uttarakhand, Lucknow (UP), Gandhinagar (Gujrat), Jorhat (Assam), Bihar and Chhattisgarh

B. Jammu & Kashmir
Activities Achievements/outcome
Medicinal & Aromatic Plants, Bio-Pesticides, Bio-fertilizers in J&K High Yield varieties of MAPs developed suitable for J&K
Good Planting Materials of MAPs provided to 100s of J&K farmers
350 ha covered under cultivation
Microbial bio-pesticides, bio-fertilizers and mosquito larvicides developed and transferred to farmers
Employment generated about 90,000 man days

C. Gujarat
S. No. Activities Achievements/outcome
1. Quality Salt for Marginal Salt Producers CSIR-CSMCRI technology utilization in production of high purity solar salt meeting the requirements of BIS specifications
Fetched premium price of 200-250% to the salt workers
825 marginal salt producers in Gujarat earn an additional income of Rs 1.0-1.5 lakhs over regular income
Technology transferred to marginal and small scale producers
2. Water Purification domestic units for Arsenic and Fluoride removal Macroporous treated resin developed for removal of arsenic from water
Resin perform well over a wide pH range
Removes both form of arsenic (As+3 and As+5)
Resin can be reused after its generation
Each unit can produce 25 LPH arsenic/fluoride free water
Units installed and training given
Arsenic testing kit developed and distributed to the people
Testing cost Rs 3 in comparison to commercial kit test cost of Rs 70
D. Gujarat and Rajasthan
S. No. Activities Achievements/outcome
1. Improved Rural Tanning Developed the improved rural bag tanning technology
Conversion of wet blue to finest leather and improved method for sole leather
Technologies transferred to rural artisan in Rajasthan and leather cooperative societies in Gujarat
Trained 200 artisans in Gujarat and Rajasthan
2. Innovative Materials for Kolhapuri footwear Developed newer materials in place of Bag tanned leathers
Engineered Kolhapuri bottom preparation for enhanced productivity deliverables
Utilized discarded leather scraps from shoe industry for fabrication
Technology resulted in income generation for the artisans
3.. Better recovery and utilization of fallen animal carcasses Extended technical help to NGO's and cooperative societies in improving quality of life and also augmenting income by utilizing fallen carcass in Gujarat (Kanjari, Tranja, Bardoli, Nadiad), Rajasthan (Pipad City, Mathaniya and Balwa of Jodhpur District)

E. Himachal Pradesh
S. No. Activities Achievements/outcome
1. Tea Farm mechanization Protocol on "Tea Farm mechanization Culture" developed
755 workers engaged in tea plantations trained in Himachal Pradesh
2. Advisory services for production of quality tea 3,500 jobs created for workers in tea gardens in Himachal Pradesh
2,000 small tea growers benefitted
Crop production increased by about 10%
3. Virus free Apple, Plum and Cherry 37 varieties and 9 rootstocks of apple, 3 varieties of cherry and 3 varieties of Plum maintained virus free at CSIR-IHBT germplasm field
90,000 quality planting materials distributed covering an area of 90 ha
4. Curcuma and Hedychium cultivation in agro-forestry system 25 ha brought under cultivation

500 persons trained and provided quality planting materials
5. Utilization of local plant raw material for attractive returns Process for production of Aescin and Lutein at pilot scale standardized
Production of Essential Oils and Polyunsaturated Fatty Acids (PUFA) from wild Aromatic species demonstrated
Preparation of herbal shampoo from local resources demonstrated for production of value added products
6. Promotion and Utilization of bamboo Rooted and rhizome plants provided to farmers
Production of better quality bamboo charcoal demonstrated (16% better recovery)
Training imparted for making Value Added Products like Bamboo RTS (Ready to Serve) drink, Bamboo squash, Bamboo syrup, bamboo candy etc.
200 ha brought under cultivation in Himachal Pradesh
State of the art bamboo museum established at CSIR-IHBT
7. Promotion of cultivation of medicinal, aromatic and other high valued crops 500 ha brought under cultivation of medicinal, aromatic and dye plants (MADPs)
0.50 lakhs working man months generated
Training conducted to impart know-how on MADPs
8. Transfer of cut flower and virus tested planting materials production 83 ha covered under commercial cut flower crops
Generated 2.97 lakhs working man months in rural sector
Agro-technology on commercially important cut flower crops transferred to entrepreneurs/NGOs of Himachal Pradesh
Rs 50 lakhs realized through sale of Lilium cut flower in Delhi
9. Design and development of mobile essential oil extraction units Mobile essential oil distillation unit of capacity 2q/batch designed and fabricated
Loss of essential oil during transportation reduced
Demonstration carried out on essential oil production to create awareness among farmers
F. Jharkhand
S. No. Activities Achievements/outcome
1. Utilization of natural minerals for providing safe drinking water Database created on the possible usage of a wide range of naturally occurring minerals having potential as water purifiers
Database launched as an open access web portal (www.safewater.in)

Portal contains valuable knowledgebase for negotiating various water quality issues
Portal has two dedicated pages on arsenic and fluoride posted in Hindi, Oriya, Telugu and other regional languages

G. Kerala
S. No. Activities Achievements/outcome
1. Reverse flow natural convection driers Reverse flow natural convection drying process & driers developed
320 dryers fabricated and sold during 2007-2011
More than Rs 50 lakhs revenue generated

H. Maharashtra
Recovery of bio-flavours from damaged cull fruits and biomass Process for recovery of essential oils from waste citrus fruits and peel wastes suitable for rural people developed
Technology transferred to 4 entrepreneurs

I. Madhya Pradesh
S.No. Activities Achievements/outcome
1. Utilizing Sisal Improved Raspador machine for extraction of quality sisal fibre developed
Know-how to make yarn and buffing wheel from sisal developed
Sisal Resources Centres established at 12 villages
153 farmers started generating additional income
2. Dissemination and Showcasing of CSIR Rural Technologies
Journal of Rural Technology Facilitated publication of about 200 research papers of CSIR scientists and from other institutes
Translation of abstracts done in Hindi for the benefit of NGO's and rural entrepreneurs
1000 copies distributed to NGO's, KVK's and other rural development organizations
Good database of latest rural technologies created
CSIR Rural Gallery Unique and single place created where all available CSIR rural technologies are displayed
Gallery useful for the visitors in understanding the CSIR strength in the area of rural development
1800 people visited the gallery
Workshops and Training Programs 3 National level workshop organized for wide dissemination of CSIR rural technologies, benefitted more than 500 participants
Training program covering 129 participants organized for income generation
Film on CSIR Rural Technologies Distributed to around 100 participants during CSIR Technology Social Entrepreneur Meet on 16th August 2010
100 copies distributed to various CSIR labs and rural development institutes
Website on CSIR Rural Technologies and CSIR 800 Made for effective outreach of the CSIR rural technologies and widespread use by society

J. North East

S.No. Activities Achievements/outcome
1. Post harvest Centers at Mizoram and Arunachal Pradesh 1 post harvest processing center at Mizoram and 2 at Arunachal Pradesh established
Provided employment to 300 people
Augmented income of about 10,000 farmers by 20-25%
2. Sericulture promotion in North East states of India (Assam and Manipur) Terminalia chebula (Helica) based product called "Muga Heal 1" released by CSIR-NEIST for control of 'flacherie' disease in muga silkworm and enhanced silk production
Low cost incubation chamber provided for hatching of eggs
Technology transferred to 259 cluster beneficiaries/farmers and 53 SHGs of Assam and Manipur
Established 1 Pupal Oil extraction plants in Manipur and 1 in Assam
Total employment generated about 19,500

3. Aromatic plants and Mushroom cultivation promotion in North East Aromatic plant cultivation extended to 400 ha in Kamrup and Karbi Anglong of Assam, Tanphye and Khatkhati of Nagaland, Nungba and Senapati of Manipur and Papumpare and Kurungkume of Arunachal Pradesh
Mushroom cultivation extended to 600 new growers in Nagaon, Jorhat and Sivasagar of Assam, Wokha of Nagaland, Gandhigram of Tripura, Sonajuli of Arunachal Pradesh and Senapati of Manipur
8 Aromatic plant processing unit established in the states of Assam, Nagaland, Manipur and Arunachal Pradesh
8 Mushroom Spawn production Centre established in the states of Assam, Nagaland, Arunachal Pradesh, Tripura and Manipur
5 lakh Quality Citronella/Lemongrass slips distributed
Distributed 6000 Mushroom Spawn packets
6 MAP bulletins prepared in Assamese, Hindi, English, Bengali, Manipuri and Nagamese
42 Training in Aromatic plant Cultivation given in the states of Assam, Nagaland, Arunachal Pradesh, Manipur and Mizoram
50 Training on Mushroom cultivation given in the states of Assam, Nagaland, Tripura, Arunachal Pradesh and Manipur
1 Technology commercialized (Mosquito Repellent Incense sticks)
1 Technology lab scale trial completed (Plant based storage fumigant)
2600 man-days/year created from aromatic plant production
1800 man-days/year created from mushroom cultivation
Revenue generated about Rs 380 lakh
4. Earthquake Preparedness in North East focusing Kopili Lineament 9 broad band seismological stations operationalized
7 seismological stations connected by VSAT to Central receiving station at CSIR-NGRI
Seismicity map of the Kopili lineament prepared
Knowledge about why earthquake occur and the precautions to be taken, published and distributed as educational material (12 charts and booklets) to 500 school children
5. North East Ethnic Designs data bank for footwear Ethnic design of North East documented and a data bank prepared
Documented the designs having potential to generate handsome returns to leather artisans
1 ethnic design lab established to serve as resource center for leather artisans

K. Tamilnadu and Punjab
S.No. Activities Achievements/outcome
1. Seaweeds for coastal fisher folk Commercially cultivated by more than 800 SHGs in Tamilnadu
Average earning of Rs. 4000-5000/- per month
Yields bio energy products with co-generation of bio fertilizer
2. Better recovery and utilization of fallen animal carcasses New mechanical device developed by CSIR-CLRI for lifting and flaying the carcasses which prevents damage to hides
Device provided cleaner environment and enable higher value addition to carcass bye-product
Efficient meat cooker developed and demonstrated
Extended technical help to NGO's and cooperative societies in improving quality of life and also augmenting income by utilizing fallen carcass in villages of Tamilnadu and Punjab
3. Electrochemical Technologies for Drinking Water
Electrochemical De-fluoridator 100 liter per hour capacity electrolyser designed and demonstrated
Electrochemical hydrochlorite generator 100 g/h capacity electrolyser to produce hypochlorite from dilute chloride solution designed, fabricated and demonstrated
Electrochemical Ozone Generator Polymer Electrolyte Membrane (PEM) based ozone generator developed and ready for commercialization

L. Uttar Pradesh
S. No. Activities Achievements/outcome
1. Strategic Medicinal and Industrial Plants based technologies Bio-village programme on Khus strengthened in Uttar Pradesh
5 Kisan Mela's organized in Lucknow and Pantnagar where 7000 farmers from 15 states participated
2. Utilization of Sodic wastelands and dry flower/cut flower technologies 8 extension bulletins published for promotion of CSIR-NBRI green technology
Field demonstration carried out for reclamation of sodic wastelands, energy plantation, nursery technology, floriculture, MAPs, natural dyes, vermicomposting, herbal garden
Technology details provided to 16 schools
100 unemployed educated youth trained on professional gardening
Orientation training for 500 selected beneficiaries
Carried out awareness programs & training for 1000 school children
Beneficiaries provided with free services of sodic soil testing and reclamation technology for sodic wastelands

M. Uttar Pradesh, Karnataka and Bihar

S. No. Activities Achievements/outcome
1. Strategic Medicinal and Industrial Plants based technologies Bio-village programme on Khus strengthened in Karnataka, Uttar Pradesh and Bihar
Covered an area of 150 ha involving 1100 farmers
1000 women trained
5 Kisan Mela's organized in Lucknow and Pantnagar where 7000 farmers from 15 states participated
69 one day awareness camps/training programmes organized
15000 farmers and entrepreneurs benefitted
9 improved distillation units erected in farmers field
Essential oils and products worth INR 1000 crores produced
Cultivation of Mentha arvensis generated 4 crores man-days worth employment covering 150,000 ha under cultivation
12000 slips of citronella and 1,75,000 slips of lemongrass distributed free to 126 tribal farmers
2. Terafil Water Filter Technology disseminated in Karnataka under Bharat Nirman Yojana

N. Assam, Bihar, Delhi, Himachal Pradesh, Madhya Pradesh, Meghalaya, Uttarakhand, Uttar Pradesh, West Bengal

S.No. Activities Achievements/outcome
1. Affordable Housing in Rural Areas Trained 1200 engineers, 600 masons, 20 entrepreneurs and NGO's on rural housing technologies in different states
Preparation of prefabricated walling and roofing elements
Demonstrated earthquake resistant quality construction
Improved rural mud housing technologies
Construction of 1500 houses in and around Delhi using CSIR-CBRI technologies
Awareness drive conducted through exhibitions, manuals, pamphlets, newspapers, training programs and website undertaken to reach 10 million people
Technology transferred to 3 NGO's and 4 Govt. deptts

O. Odisha
S.No. Activities Achievements/outcome
1. Terafil Water Filter 12 technology packages on low cost drinking water purification developed and commercialized
10 demonstrations, 5 workshop-cum-training organized
Technology transferred to 160 entrepreneurs
100 million lit/day Terafil treated drinking water supplied to the country
2. Environmentally safe natural dyes for rural handloom sectors Design, fabrication and installation of prototype for extraction of natural dye from plant resources @ 10 kg/day capacity completed
3.. Better recovery and utilization of fallen animal carcasses Extended technical help to NGO's and cooperative societies in improving quality of life and also augmenting income by utilizing fallen carcass in Jeypore (Orissa)

P. Telangana, Andhra Pradesh, Tamil Nadu, Karnataka, Chhattisgarh
S.No. Activities Achievements/outcome
1. Improved Samba Mahsuri (ISM) Rice Cultivation It estimated that ISM cultivated at an approximate area of 90,000 ha. As per AgMarknet (http://agmarknet.nic.in) data Samba Mahsuri fetched average price of Rs. 12686/tonne; say ~ Rs. 10,000.00/tonne during 2011-2013. Farmers growing ISM in Bacterial Blight endemic areas get an extra yield of 1 tonne/hectare, so extra income of Rs. 10,000/hectare. Across 90,000 hectares, it amounts to extra income of Rs 90 crores. Total sales (i.e. turnover) by farmers from 90,000 hectares would be Rs. 450 crores (assuming a yield of 5 tonnes paddy/hectare and Rs. 10,000/tonne).
During January 2015, Improved Samba Mahsuri has been licensed to M/s Metahelix Life Sciences Ltd

Annexure-III
Medicinal & Aromatic Plants (MAPs) Outreach and Impact

Spread of the improved varieties developed by CSIR-CIMAP & CSIR-IIIM, estimated area under cultivation with value and generation of employment in terms of man-days
Improved varieties Estimated area (hectares) Estimated production (tonnes) Current market rate (Rs per kg) Estimated value (Rs. in crores) Employment generated
(in Lakh Man-days)
Menthol mint var. Kosi 2,25,000 25000 900 2250 562
Peppermint var. Kukrail 10,000 800 1300 104 25
Spearmint var MSS-5 2,000 200 1500 30 4
Mentha longifolia (anant carvomint var. RRL(J)ML-4 200 30.00 1500 4.5 0.50
Tulsi
(Indian basil) 15,000 800 500 40 15
Lemongrass var.Krishna 12,000 2000 800 160 21
Lemongrass var. CKP-25 800 200 700 14 2.00
Lemongrass
CPK-F2-38 var. Kalam 80 16.00 700 1.12 0.20
Palmarosa var.PRC-1 10,000 800 1400 112 14
Citronella var. Bio-13 10,000 2000 900 180 8.75
Khus (CIM Vriddhi, KS-1, Dharini and Gulabi 20,000 400 14000 560 40
Ashwagandha var. Poshita 4,000 900 120 10.80 2.25
Ashwagandha AGB-002 40 32.00 110 0.352 0.10
Senna Var. Sona 20,000 1500 (Leaves)

1000 (Pods) 30
50 4.80
5.00 24
Artemisia annua
Var. CIM-Arogya 2,000 5000 34 17.00 2.40
Patchouli 1,000 70 5000 35.00 8
Lavender 800 40 10000 40 2
TOTAL 3,32,920 3568.572 731.20

Estimated area under cultivation of improved varieties = approx. 3.32 Lakhs ha
Estimated value = Rs. 3568.57 cr.
Employment generation in terms of estimated man-days = 7.31 cr.